

Application No. : 10/800,144
Filed : March 12, 2004

IN THE CLAIMS:

Please amend Claims 1, 2, 14-16, 34, 44, and 45 as follows:

1. (Currently Amended) A disposable dental instrument driven by compressed air comprising:

an elongated body, said elongated body comprising:

a first shell, a second mating shell, and a core, said first and second shells joined to form an exterior surface for manual manipulation, said shells forming a cavity, said cavity comprising a first set of integrally formed grooves within a cavity wall, said core comprising a second set of integrally formed grooves matching up with said first set of grooves, said first and second set of grooves being matched in shape and location to define various passageways as fluid conduits;

a base, said base comprising:

a plurality of conduits, said base communicating with an outside source of light, air, and water through said conduits, said conduits communicating with said passageways defined by said elongated body; a head located at the opposite end from said base, said head comprising:

a supporting shaft, bearings rotatably supporting an upper and lower end of said supporting shaft, each bearing positioned within a bushing, said bushings positioned within said head, a turbine impeller, said turbine impeller connected to said supporting shaft, said turbine impeller being driven by said compressed source air through an air nozzle to rotate a dental bur, a dental bur mounting system, a dental bur removal system, said dental bur removal system having an access hole to allow an object to push out said dental bur from said supporting shaft, at least one of said plurality of conduits extending from said base to said bearings and configured to guide water from said outside source to said bearings; and

various openings located proximate to said head, said various openings delivering light, air, and water in the general direction of said dental bur.

2. (Currently Amended) A disposable dental instrument driven by compressed air comprising:

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an elongated body, said elongated body comprising:

a first shell, a mating second shell, and a core, said first and second shells joined to form an exterior surface for manual manipulation, said shells forming a cavity, said cavity comprising a first set of integrally formed grooves within a cavity wall, said core comprising a second set of integrally formed grooves matching up with said first set of grooves, said first and second set of grooves being substantially matched in shape and location to define various passageways as fluid conduits;

a base, said base comprising:

a plurality of conduits, said base communicating with an outside source of light, air, and water through said conduits, said conduits communicating with said passageways defined by said elongated body;
a head located at the opposite end from said base, said head comprising:

a rotatable turbine shaft, first and second bushings mounted within said head and rotatably supporting said turbine shaft, a turbine impeller located between said first and second bushings and attached to said rotatable turbine shaft;

said turbine impeller being juxtaposed an air nozzle connected to said compressed air source by one of said fluid conduits so as to drive the impeller with the air; and

a dental bur mounting apparatus attached at one end of said turbine shaft, at least one of said conduits extending from said base to the turbine shaft and configured to direct water from the outside source to the turbine shaft.

3. (Original) The disposable dental instrument of Claim 2, wherein said elongated body is angled.

4. (Original) The disposable dental instrument of Claim 2, wherein said elongated body is made substantially entirely of plastic.

5. (Original) The disposable dental instrument of Claim 2, wherein said elongated body is made partially of plastic.

6. (Original) The disposable dental instrument of Claim 2, wherein said elongated body is made partially of metal.

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7. (Original) The disposable dental instrument of Claim 2, wherein exterior surfaces of said shell halves are coated with rubber.

8. (Original) The disposable dental instrument of Claim 2 having a fiber optic conduit communicating with an outside source of light.

9. (Original) The disposable dental instrument of Claim 2, wherein said turbine impeller incorporates straight turbine blades.

10. (Original) The disposable dental instrument of Claim 2, wherein said turbine impeller incorporates curved turbine blades.

11. (Original) The disposable dental instrument of Claim 2, wherein said turbine impeller has a paddlewheel configuration.

12. (Original) The disposable dental instrument of Claim 2, wherein said air nozzle incorporates a venturi.

13. (Original) The disposable dental instrument of Claim 2 having an opening for delivering light in the general direction of said dental bur.

14. (Currently Amended) The disposable dental instrument of Claim 13 ~~wherein the focus of said light is~~ configured to have adjustable focus.

15. (Currently Amended) The disposable dental instrument of Claim 2 having an opening delivering water in the general direction of said dental bur.

16. (Currently Amended) The disposable dental instrument of Claim 15 where said opening for delivering water is configured to be adjustable.

17. (Original) The disposable dental instrument of Claim 2, wherein said shaft includes bearings mounted within said bushings supported by said head

18. (Original) The disposable dental instrument of Claim 17, wherein said bearings are made of plastic.

19. (Original) The disposable dental instrument of Claim 17, wherein said bearings are made of metal.

20. (Original) The disposable dental instrument of Claim 17, wherein said bearings are sealed.

21. (Original) The disposable dental instrument of Claim 17, wherein said bearings are lubricated under pressure.

22. (Original) The disposable dental instrument of Claim 21, wherein said lubricant is oil.

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23. (Original) The disposable dental instrument of Claim 21, wherein said lubricant is water.

24. (Original) The disposable dental instrument of Claim 21, wherein said bearings are floating within a lubricant.

25. (Original) The disposable dental instrument of Claim 21, wherein said lubricant is oil.

26. (Original) The disposable dental instrument of Claim 21, wherein said lubricant is water.

27. (Original) The disposable dental instrument of Claim 21, wherein said bushings are made of rubber.

28. (Original) The disposable dental instrument of Claim 2, wherein said shaft is rotatably mounted by bushings supported by said head and said bushings provide internal bearing surfaces for said shaft.

29. (Original) The disposable dental instrument of Claim 28, wherein said bushings are made of plastic.

30. (Original) The disposable dental instrument of Claim 28, wherein said bushings are made of metal.

31. (Original) The disposable dental instrument of Claim 28, wherein said brushings are made of sintered metal.

32. (Original) The disposable dental instrument of Claim 31, wherein one of said conduits conducts water under pressure to said bushing so that said water is forced through the walls of said bushings to lubricate the internal bearing surfaces thereof.

33. (Original) The disposable dental instrument of Claim 28, wherein said bushings have an outer cone shaped configuration adapted to engage a cone-shaped wall within said head to limit lateral movement of said shaft within said head.

34. (Currently Amended) A disposable dental instrument driven by compressed air comprising:

an elongated body, said elongated body comprising:

a first shell half, a second shell half, and a core, said shell halves joined to form an exterior surface for manual manipulation, said halves forming a cavity, said cavity comprising a first set of integrally formed grooves within a cavity wall, said core comprising a second set of integrally

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formed grooves matching up with said first set of grooves, said first and second set of grooves being matched in shape and location to define various passageways as fluid conduits;

a base, said base comprising:

a plurality of conduits, said base communicating with an outside source of light, air, and water through said conduits, said conduits communicating with said passageways defined by said elongated body; a head located at the opposite end from said base, said head comprising:

a supporting shaft rotatably mounted within said head; a turbine impeller, said turbine impeller connected to said supporting shaft, said turbine impeller being driven by said outside source of air through an air nozzle to rotate a dental bur, a dental bur mounting system, a dental bur removal system, said dental bur removal system having an access hole to allow an object to push out said dental bur from said supporting shaft;

various openings located under said head, said various openings delivering light, air, and water in the general direction of said dental bur; and

a shell half joining system incorporating said first shell half and said second shell half, said first shell half incorporating a square angled protruding surface along the entire joining edge of said first shell half, said square angled protruding surface defining a first width, said second shell half incorporating a triangular shaped recess surface along the entire joining edge of said second shell half, said triangular shaped recess including first and second slanted walls extending from said joining edge inwardly and toward each other, said slanted walls at the joining edge defining a second width that is larger than the first width, and defining a third width that is smaller than the first width at a central portion of the triangular shaped recess, said square angled protruding surface designed to integrally join with said triangular shaped recess surface to form a strong, water and air proof connection.

35. (Original) The disposable dental instrument of Claim 34, wherein said elongated body is angled.

36. (Original) The disposable dental instrument of Claim 34, wherein said elongated body is made entirely of plastic.

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37. (Original) The disposable dental instrument of Claim 34, wherein said elongated body is made partially of plastic.

38. (Original) The disposable dental instrument of Claim 34, wherein said elongated body is made partially of metal.

39. (Original) The disposable dental instrument of Claim 34, wherein said exterior surface is coated with rubber.

40. (Original) The disposable dental instrument of Claim 34, wherein at least one of said conduits communicating with said outside source of light is made of fiber optics.

41. (Original) The disposable dental instrument of Claim 34, wherein said turbine impeller incorporates straight turbine blades.

42. (Original) The disposable dental instrument of Claim 34, wherein said turbine impeller incorporates curved turbine blades.

43. (Original) The disposable dental instrument of Claim 34, wherein said air nozzle incorporates a venturi.

44. (Currently Amended) The disposable dental instrument of Claim 34, wherein ~~the focus of~~ one of said openings delivering light is configured to provide adjustable focus of said light.

45. (Currently Amended) The disposable dental instrument of Claim 34, wherein one of said openings delivering water is configured to be adjustable.

46. (Original) The disposable dental instrument of Claim 34, wherein said shell half-joining system incorporates plastic heat welding.

47. (Original) The disposable dental instrument of Claim 34, wherein said shell half-joining system incorporates various frequencies of sonic frequency welding.